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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--------------------------------------------------------------------------|-------------|------------------------|----------------------------|------------------------|
| 10/536,505 | 05/25/2005 | Patrice Ouvrier-Buffer | 034299-635 | 6542 |
| 7590 Thelen Reid & Priest PO Box 640640 San Jose, CA 95164-0640 | | | EXAMINER BAKER, DAVID S | |
| | | | ART UNIT 2884 | PAPER NUMBER |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|----------------------------------------------|--|
| Office Action Summary | Application No. 10/536,505 | Applicant(s) OUVRIER-BUFFET ET AL. | |
| | Examiner David S. Baker | Art Unit 2884 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 May 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>8/29/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character “24” has been used to designate both “power supply terminals” (specification, page 13, lines 22-23) and “a comparator” (claim 5). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The examiner notes that this error may be a simple typo in claim 5. Correcting the feature number of the comparator to “29” in claim 5 would put the specification, the drawings, and the claims in compliance and overcome this objection.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 2884

3. Claims 1-6, 10, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Kumazawa (US 4,727,256 A).

Regarding claim 1, Kumazawa discloses a processing circuit for a spectrometer comprising: a particle radiation detector (F:1, C:7 L:5 thru C:9 L:45); a charge preamplifier stage (F:1, C:7 L:5 thru C:9 L:45) for receiving a pulse current from the detector; a differentiator stage (F:1, C:7 L:5 thru C:9 L:45) connected to the charge preamplifier stage for receiving a signal; an integrator stage (F:1, C:7 L:5 thru C:9 L:45) connected to the differentiator stage for receiving a signal; means for controlling the integration time (F:1, C:7 L:5 thru C:9 L:45) as part of the integrator and connected to the differentiator, wherein the differentiator stage and the means for controlling the integration time form a band-pass filter with self-adaptive time constants (F:1, C:7 L:5 thru C:9 L:45).

Regarding claim 2, Kumazawa discloses that the charge preamplifier stage includes a discrete amplifier mounted as a current integrator (F:1, C:7 L:5 thru C:9 L:45).

Regarding claim 3, Kumazawa discloses that the differentiator stage includes an operation amplifier mounted as a differentiator (F:1, C:7 L:5 thru C:9 L:45).

Regarding claim 4, Kumazawa discloses that the integrator stage includes an operational amplifier mounted as an integrator (F:1, C:7 L:5 thru C:9 L:45).

Regarding claim 5, Kumazawa discloses that the mean for controlling the integration time include a first switch (F:1, C:7 L:5 thru C:9 L:45) inserted between the integrator and the output of the differentiator stage, a second switch for resetting the integrator to zero (F:1, C:7 L:5 thru C:9 L:45), a logic circuit for controlling the switches

Art Unit: 2884

(F:1, C:7 L:5 thru C:9 L:45), a comparator (F:1, C:7 L:5 thru C:9 L:45) for enabling the logic circuit according to the results of a comparison between the signal and the image of the detector current and a threshold (F:1, C:7 L:5 thru C:9 L:45).

Regarding claim 6, Kumazawa discloses a spectrometry chain comprising: a detector (F:1, C:7 L:5 thru C:9 L:45); and a processing circuit according to claim 1 (F:1, C:7 L:5 thru C:9 L:45).

Regarding claim 10, Kumazawa discloses that the detector may be a CdTe semiconductor detector (C:1 L:53-61).

Regarding claim 12, Kumazawa discloses a spectrometry chain comprising: a detector (F:1, C:7 L:5 thru C:9 L:45); and a processing circuit according to claim 5 (F:1, C:7 L:5 thru C:9 L:45) downstream from the detector.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

Art Unit: 2884

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kumazawa (US 4,727,256 A) in view of Lingren (US 6,172,362 B1).

Regarding claim 7, Kumazawa discloses the claimed invention, but does not disclose expressly an acquisition circuit comprising: an analog to digital converter; and a memory connected downstream from the analog to digital converter. Lingren discloses a radiation detector with a readout circuit including an analog to digital converter and a memory connected downstream from the analog to digital converter (F:8, C:19 L:40-60). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to include Lingren's analog to digital converter and a memory connected downstream from the analog to digital converter in the readout circuit of Kumazawa. The motivation for doing so would have been to improve compatibility by storing the data in a digital format.

Regarding claim 8, Kumazawa discloses that the signal delivered by the logic circuit conditions the acquisition time (C:7 L:5 thru C:9 L:45).

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kumazawa (US 4,727,256 A) in view of Weirauch (US 5,920,071 A).

Regarding claim 9, Kumazawa discloses the claimed invention but does not disclose expressly that the detector is inserted with a resistor into a divider bridge circuit. Weirauch discloses a radiation detector where the detector is inserted with a resistor into a divider bridge circuit (C:7 L:50 thru C:8 L:13). At the time the invention was made, it

Art Unit: 2884

would have been obvious to a person of ordinary skill in the art to use the divider bridge circuit of Weirauch as the detector of Kumazawa. The motivation for doing so would have been that the use a bridge divider circuit would decrease detector noise by allowing the bridge to be voltage driven.

8. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kumazawa (US 4,727,256 A) in view of Verger (US 6,420,710 B1).

Regarding claim 11, Kumazawa discloses that the detector may be a CdTe semiconductor detector (C:1 L:53-61). Kumazawa does not disclose expressly that the CdTe semiconductor is doped with Cl or I. Verger discloses a semiconductor radiation detector that makes use of a CdTe:Cl or CdZnTe semiconductor detector (C:5 L:5-19). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use Verger's CdTe:Cl or CdZnTe semiconductor detector as the CdTe detector of Kumazawa. The motivation for doing so would have been to increase the resistivity of the detector and thereby decrease the inherent noise of the detector.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David S. Baker whose telephone number is (571) 272-6003. The examiner can normally be reached on MTWRF 9:30am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2884

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DSB



DAVID PORTIA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2880